*Global Energy Security: Resource Availability, Economic Conditions and Political Constraints**)

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1. The concept of energy security

Energy security is back on the international political agenda. Not since the 1970s has energy been a more prominent political issue than today. The US Congress is considering the Clean Energy and Security Act, which conflates the perceived threat of climate change with the threat of energy dependence. The European Union produces several studies and initiate policies to secure energy supplies, and in communicating with its citizens the following warning is issued on the internet: "With both energy consumption and dependency on oil and gas imports growing and supplies becoming scarcer, the risk of supply failure is rising. Securing European energy supplies is therefore high on the EU's agenda."[1] In the media energy issues makes the headline daily and in the scholarly- and 'not-so-scholarly'-bookshelves the titles are increasingly alarmist: 'Lights Out', 'Protect Yourself and Profit from the Coming Energy Crisis', and 'The end of Oil: On the Edge of a Perilous New World'.

From time to time energy security becomes an imminent concern of state leaders. It all began when Winston Churchill, as First Lord of the Admiralty, prior to the First World War changed from coal to oil as power source for the Royal Navy. With the UK war machine dependent on Middle Eastern oil instead of British coal, oil supplies turned into a high level foreign policy and security issue. The two world wars demonstrated the importance of oil for victory on the battlefield. After the Second World War the commercial role of oil exploded with the motorization of daily life. When the oil producers organized themselves and took control over the upstream segment of the industry it was perceived as a fundamental threat to the Western way of life. Reducing the dependency on foreign oil was given top priority: "Aside from our military defense, there is no project of more central importance to our national security and indeed our independence as a sovereign nation" (Kissinger 1982).

After the price fall of 1986 oil became just another commodity. The price fell, oil supply was abundant and oil trade was increasingly handled at, or in connection with, market-based stock exchanges. The oil market took on the features of a global buyers market, with competing producers eager to secure outlet for their own resources. OPEC struggled with lack of internal cohesion and the increasing interaction between the oil market and financial markets made oil trade take on the features of other commodities. However, when Chinese and Indian oil demand increased beyond expectation in 2003, the balance shifted from a perception of an oversupplied oil market to a fear of future lack of supply. This put the world in a situation where investments in new resources were lagging the increase in demand and

[1] http://ec.europa.eu/energy/security/index_en.htm, downloaded august 29. 2010.

the price skyrocketed, reaching $147 in the summer of 2008. This price increase had no immediate political explanation, which led to some analysts concluding that the price rise was an indication of resource depletion (Deffeyes 2005). The idea that the price signaled fundamental resource depletion is based on an energy version of the new-Malthusian idea that our consumption of natural resources is unsustainable given increase in population and energy consumption. A view particularly promoted by the so-called Peak Oil movement (Areklett 2010, Campell 2005).

This brief passage through a hundred years of oil history suggests that energy security is a complex issue with an inherent and intrinsic mixture of geological, economic and political factors. The aim of this paper is to try to disentangle the various aspects of the concept of energy security. This is important as causal mechanisms and societal consequences differ depending on what kind of energy security challenges we are actually facing. A well-established definition of energy security reads as follows: "adequate, reliable supplies of energy at reasonable prices in ways that do not jeopardize major national values and objectives" (Yergin 1988). Some authors have recently suggested that the concept needs to be broadened. Elkind (2009) divides energy security into the categories: availability, reliability, and affordability. Then he adds a fourth aspect, sustainability, in order also to capture the environmental aspects of energy consumption. My view is that one should not try to add more aspects to the already over-burdened concept of energy security. Furthermore, the environmental aspects related to energy, fossil fuels in particular, contradicts the other aspects of energy security. The more available, reliable, and affordable supplies of fossil fuels becomes the less sustainable will the world's energy consumption be, if one believes the climate change models of the IPCC. I thus find it most fruitful to exclude the environmental sustainability as part of the concept of energy security.

The literature on energy security is to large extent derived from general energy studies, and thus not well-informed or related to the general security studies. A number of theoretical approaches to international security could also be applied to the energy sector. As an illustration the Copenhagen School emphasizes the way an issue becomes a security issue, through a process of securitization. Securitization is defined as a successful speech act "through which an intersubjective understanding is constructed within a political community to treat something as an existential threat to a valued referent object, and to enable a call for urgent and exceptional measures to deal with the threat" (Buzan and Wæver 2003: 491). As Strizel points out, this has immediate and significant implication for policy: "The articulation of 'security' entails the claim that something is held to pose threat to a valued referent object

that is so existential that it is legitimate to move the issue beyond the established games of 'normal' politics to deal with it by exceptional, i.e. security, methods. This puts an actor in a very strong position to deal with an issue as he/she thinks is appropriate" (Stritzel (2007:360). As the statement referred from Kissinger above demonstrates, this fits perfectly with his and many following statements by representatives of the US government and US analysts. His reference to 'our independence as a sovereign nation' defines the threat as an utmost severe and dramatic threat. Although this perspective is most prominent in newspaper and general political journals, also some semi-recent academic studies in the energy field have expressed a similar securitizational perspective (Kalicki and Goldwyn 2005, Barnes and Jaffe 2006). The point following the Copenhagen School is that in itself by defining reliable and affordable energy supplies as a security issue, certain policy implications follows: in particular the kind of means available, but more important – what means are appropriate. Defining energy supplies as a security issue contradicts a subsequent call for oil consumers to rely on market mechanisms, international institutions or the good will of other actors (like Arab allies). In line with Yergin (2006) I find the economic element of energy supply far more prominent today that in the 1970s. The implication is obvious: "Energy interdependence and the growing scale of energy trade require continuing collaboration among both producers and consumers to ensure the security of the entire supply chain (Yergin 2006: 78). On the political level it is necessary to develop a far more sophisticated system of global governance of energy (Goldthau and Witte 2010). Both these changes presuppose a 'de-securitization' of the concept and understanding of energy security.

A first step in this direction is to disentangle the various implications of the different elements of the energy security concept in order to provide a more nuanced understanding of how structural changes (both political and economic) influence constraints and opportunities for achieving energy security, the mechanisms involved, and the policy implications that follow. In this paper I will distinguish between (i) the physical availability of resources, (ii) the economic conditions for producing crude oil, refining it and bringing it to the consumers, and (iii) the political constraints that embeds these activities. This perspective suggest that oil supplies are insecure in a *physical sense* if global oil resources are actually depleted, insecure in an *economic sense* if the costs of producing oil increase beyond consumers ability to pay for it, and insecure in a *political sense* if they are only attainable by jeopardizing fundamental political values or objectives. At the end of the paper some policy implications for US and European energy strategies are discussed.

2. Global energy resources – a geological fact?

As mentioned, the rise in oil prices from 2003 to 2008 was by some interpreted as a structural phenomenon indicating increased fundamental shortage on oil reserves. In particular those belonging to the Peak Oil School find that oil prices are soon set to increase dramatically due to lack of sufficient reserves to serve increasing oil demand. The 2008 report by the IEA subscribes to this view (IEA 2008).This debate is not made irrelevant with the global spread of the crisis. If one believes that the world is soon running out of oil, one's perception of both commercial and political aspects of the market will change dramatically. On the political level no policy change could change the geological fact. The political attention would turn to alternatives, both readably available alternatives and more uncertain infant energy industries would gain access to large public subsidies. The perception of a fundamental threat to the existence of the modern world would emerge, and no public funding of potential solutions would be regarded too expensive. Also the market actors' perception of the future resource balance is important for the present market situation. A fundamental geological depletion of world oil resources would create a continuous and almost unlimited increase in prices as the probability of lasting supply shortage increases. A somewhat cautions approach the issue is thus advisable.

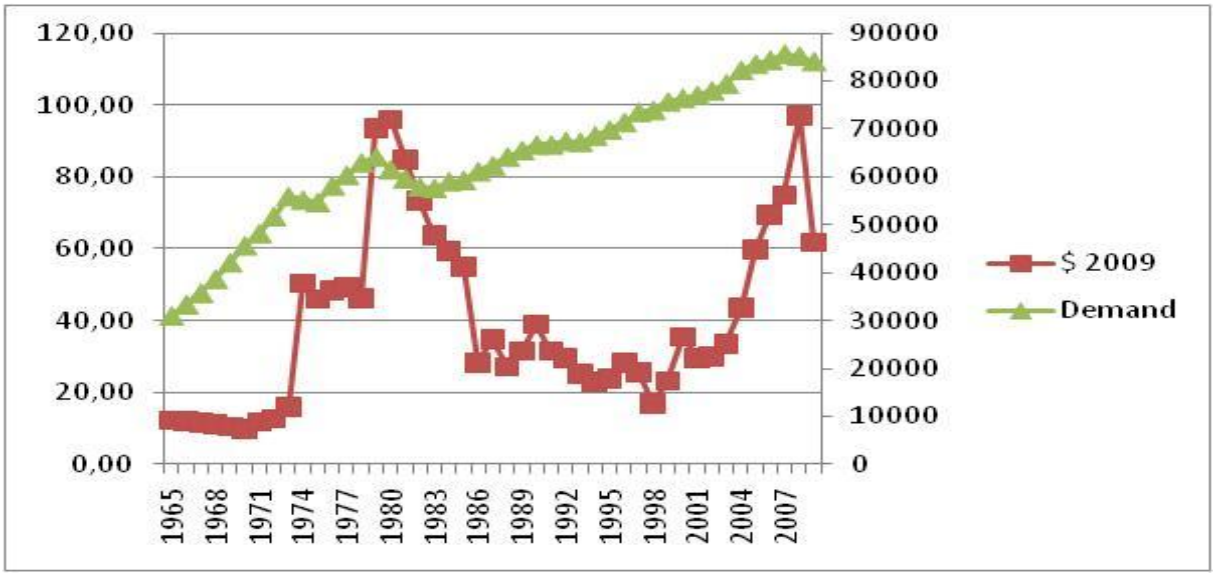
Whenever oil prices are high, doomsayers predict the end of oil because price increases have been interpreted as signaling scarcity. The perception of scarcity leads to projections of continuous price increases, which again are taken as evidence of scarcity. There is inarguably a fixed amount of physical oil reserves in the world, but as a prominent student of the world oil market, Morris A. Adelman, has said, "Whatever is left in the ground is unknown, probably unknowable but surely unimportant; a geological fact of no economic interest" (Adelman 1993a: 220).[2] The true signal of scarcity is the cost of replacing the oil produced with new reserves. A large portion of the world's oil reserves are, in fact, located in countries with falling replacement costs (Adelman 1993b).

The recent period of high oil prices can adequately be explained as primarily the result of cyclical factors and shorter term pressure on installed production capacity in a situation of unexpected increase in demand from China, and to some extent India. The economic downturn following the global financial crisis has also turned the situation in the oil market around in just a few months, with an oil price peaking at $147 per barrel in the summer of 2008 and sold in December for less than forty dollars per barrel. Even though the price today

[2] A more recent statement by Adelman suggests that we have nothing to worry about: "amount of oil available to the market over the next 25 to 50 years is for all intents and purposes infinite," *The Economist,* April 30, 2005.

is down around seventy dollar per barrel, global demand is slow to pick up (cf. figure 1). In fact, total oil consumption fell both in 2008 and 2009, in 2009 with as much as 1.7 % (4.8% in OECD).[3] The average oil price in the forty-year period from January 1970 to January 2010 was $43.45 (in 2009 dollar). In the present situation, it is extremely hard to determine any long-term trend in the world oil price. As figure 1 illustrates the demand and the oil price are only in some instances clearly related: in periods with very rapid price increase demand slacks, and after a high-price period the rate of increase in demand is lower than in previous low-price periods. Note that there are very few observations as basis for these conclusions. It is widely acknowledged that institutional factors on the supply side of the market are more important in determining the oil price after 1971, than the demand side. After the oil price peak in 1980 the fundamental balance between supply and demand was one of oversupply. The OPEC countries, in particular Saudi Arabia, tried to cut production in order to sustain prices. However, in 1986 Saudi Arabia realized that this strategy had failed, and launched a price war against other producers, and tried to stimulate increases in demand by pursuing a low price strategy. This strategy also partly failed, since many end-consumers did not face a low product price due to the consuming countries' increased taxation by the consuming countries.

Figure 1: Oil price (2009$/b) and demand (th.b/d,) 1965-2009.



Source: *BP Statistical Review of World Energy 2010.*

[3] BP statistical review of world energy 2010.

Furthermore, the potential for new oil discoveries is substantial, particularly in the Middle East. Iraq is regarded as having the second largest reserve base, having explored only a fraction of its potential oil provinces (Mills 2008: 76). In Saudi Arabia, systematic exploration has not been conducted for decades. With a sustained period of increasing demand, Middle East oil producers could easily add billions of barrels to the total world reserves of conventional oil.

In the past, their production capacity has by far exceeded perceived future demand. Thus, they have had no incentives whatsoever to make costly investments in order to add new production capacity, which, if utilized, would have implied declining oil prices. With future increases in demand, OPEC stands to gain more from a slow increase in capacity than from a rapid response (Gately 2004). Prices might remain high without indicating reserve scarcity, but rather indicating a new tool for market power in the hands of the oil producers. It is also important to note that much of the oil being extracted today has a selling price well above what is needed to cover costs and earn a fair profit. Thus, the incentives for cost-cutting in these areas are few. In areas other than the Middle East, such as the North Sea, where profit margins from time to time have come under pressure, substantial cost-cutting efforts have been successfully implemented. New technologies in every aspect, from exploration to drilling, have substantially improved the amount of oil extractable from the reservoirs and the costs of bringing them to the market.

There are no signs today that overall replacement costs are increasing, nor does the present production level seem to be depleting world oil reserves. The so-called R/P ratio divides the total proven oil reserves by the production level and expresses the number of years the present production level can be sustained given the proven reserves. In 1980, the world's R/P ratio was 25 years, making 2005 the last year of oil. In 2010, the figure has risen to 42 years.[4] Not only have the world oil reserves been sustained, they have increased even relative to the higher production levels. The claim that the world is "running into oil, not out of oil," still holds (Odell 1994). Furthermore, a high price stimulates oil exploration (Smith 2009: 160).

Oil reserves are not a given fact determined only by geology. Technological improvements have for the past thirty years increased the amount of energy resources available more rapidly than world consumption has depleted them. Increased efficiency in energy utilization has made it possible to increase economic growth with less and less energy

[4] *BP Statistical Review of World Energy*, 1980 and 2010.

use. Changing political conditions have made energy resources accessible to IOCs in new countries. Political regimes of all kinds that discover oil tend to want to sell the oil to consumers regardless of political differences. Any attempt to determine the amount of oil resources available will have to take into consideration all these various aspects. Or, one could, as Adelman, disregard the value of such information in the first place.

3. Economic conditions

Until the 1970s, the integrated oil market structure allowed IOCs to balance world demand and supply through a vertically integrated system. One single oil company controlled the whole production chain vertically, from oil fields to gas stations. OPEC's nationalization of oil-industry assets in the 1970s introduced new market mechanisms, primarily through the system of official selling prices and long-term contracts with a variety of oil companies. Although crude oil production was increasingly handled by the national oil companies of the OPEC countries, refining and marketing remained to a large extent in the hands of the IOCs. The long-term contracts created strong bonds between seller and buyer.

However, throughout the 1970s and early 1980s, the decline in demand and the appearance of new oil producers outside the cartel made it very difficult for OPEC to enforce its official prices. As a consequence, long-term contracts were gradually phased out.[5] This system was replaced by the development of a spot market (a market for single crude cargoes), which is characterized by short-term contracts, a high rate of turnover and sensitivity to outside events. Single cargoes of oil can be sold dozens of times before finally arriving at the refinery. Following this development also a market for forward deliveries and a paper-based futures market emerged. Today, the price of almost all oil traded is set by reference to spot, paper- or futures markets.[6] The futures market reduces not only the buyers' costs of ensuring access to the commodity, but also the producers' access to market outlets. It also exposes the price setting to factors relevant to the investment decisions of actors in the various financial markets, but irrelevant to the supply and demand of oil: "the trader will buy or sell not because she/he has a physical need for the item but entirely on the basis of expectations about subsequent price movements" (Mabro 2005: 11). In certain circumstances, this can create great volatilities in the oil price as financial institutions and investors move in and out of bonds, foreign exchange and oil futures based on expectations regarding relative profitability.

[5] For a more detailed account of these changes, see Fesharaki and Razavi 1986, and Mabro 1987.

[6] Futures contracts are at the outset designed for financial purposes. In contrast to a physical market, in a futures market "the trader will buy or sell not because she/he has a physical need for the item but entirely on the basis of expectations about subsequent price movements" (Mabro 2005: 11).

Both compared to previous periods and other products, the oil price increasingly volatile: "The annual volatility of crude oil prices is high: 31 percent when calculated over the "modern" era (1974–2007) using the BP (2008) annual price series. For comparison, annual volatility averaged only 20 percent during the golden age of oil from 1874–1973. Regnier (2007), who provides volatility estimates for many products, finds that oil is now more volatile than 95 percent of all products sold in the United States" (Smith 2009: 154).

When market actors make simultaneous and instant moves in the marketplace, the behavior of all other actors could be regarded parametrically, in other words they could be taken as given. Or if the actor should make assumptions about other actors behavior it would have to be exactly that – assumptions, as no observation about others behavior is possible.

However, when the market transactions are extended in time a new kind of uncertainty enters the calculations of market actors. In such a market, actors are concerned not only with the price of the traded good today, but also the price some times in the future; the price of the good today will be influenced by the traders' expectations about the price tomorrow. This price will in turn be influenced by the expectations about the price the day after tomorrow and so on. This does not necessarily change the formation of expectations, but it creates room for more and extended strategic interaction among the market actors: "a rational agent will recognize that the price tomorrow will depend upon the actions of all other agents tomorrow, and hence upon their theories of price formation … The potential then exists for a rational agent to believe that certain events will affect the price … simply because (he believes) other agents believe these events matter" (Burnell 1989:394).

This open up for the possible influence of factors that cannot reasonably be claimed to affect the market fundamentals, such as endowments, preferences or production capacities, but that *can* be claimed to affect other actors believes. Factors that have an effect on the fundamentals are *intrinsic* to the economy, while other factors are *extrinsic*. The activity of the sun, creating sunspots is one such extrinsic factor. 'Sunspots' have thus become the name for such factors in the economic literature. The economic literature on sunspots has primarily been focused on how equilibrium emerges in such markets. The empirical cases have mostly been the stock market and to some extent the foreign exchange market. But commodity future markets, including the oil market, could also be regarded as having the characteristics making the market vulnerable to sunspots.

In such markets price formation can be thought of as a social convention. This idea of price formation as a social convention was developed by Keynes, in his book *The General Theory of Employment, Interest and Money* from 1936: "The essence of this convention lies in

assuming that the existing state of affairs will continue indefinitely, except in so far as we have specific reasons to expect a change. … We are assuming, in effect, that the existing market valuation, however arrived at, is uniquely *correct* in relation to our existing knowledge … and that it will only change in proportion to changes in this knowledge" (Keynes 1936:152). Keynes then goes on to discuss different weaknesses in this convention. For the purpose of this paper one such weakness is particularly important. Keynes argues that a "conventional valuation which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which do not really make much difference. … In abnormal times the market will be subject to waves of optimistic and pessimistic sentiment, which are unreasoning and yet in a sense legitimate where no solid basis exists for a reasonable calculation" (ibid.:154). This more than seventy year old insight from one of the greatest minds of economics seems to point directly to the present situation both in the oil market and in financial markets in general, suggesting that sunspot-markets are volatile with inherently unpredictable dynamics. Governing such markets seems to be a tall challenge. Actors seeking to influence such markets will have to convince the oil traders that their previously held perceptions are wrong. Utterances made for instance by politicians could be regarded as *extrinsic* factors influencing the market convention, not in themselves altering any fundamental parameters of the oil market, but influencing the assumptions held by market actors, in particular the traders, about the future conditions of these parameters. By influencing the traders' assumptions about the future, the sunspots (read: political statements) influence the price of oil in the forward and future markets.

In general, these changes in international oil trade make it more complicated for producers, consumers and companies to influence the oil-price. By the end of the 1990s, the short-term development of the oil price was left in the hands of the oil-market traders. It still is. Thus, all international oil companies now experience a situation where they make investments decisions without any control over the price of the product. With the recent volatility of prices combined with the increasing size of investments needed for development of new resources, like offshore Brazil, financial strength and risk-willingness becomes important aspects of companies' competitiveness.

Under these market conditions, individual producers, both OPEC and non-OPEC, have no guarantee of the long-term loyalty of their customers. Nor does it make any sense for them to isolate the security of supply of an individual consuming country. The oil traders have gained an increasingly important position in the short-term market, making it very hard for the

authorities of producing or consuming countries to determine the actual flow of traded oil. Thus, long-term supply stability should not be confused with price stability. Supply stability is primarily aimed at securing predictable volumes of oil over an extended period; price stability is primarily a matter of guaranteeing predictable costs. One may very well have a situation with ample supplies in which the price fluctuates widely. In fact, during the last three decades it has hardly been any actual physical disruptions of oil supplies. Even when the oil price was $147 in the summer of 2008, no refinery had any difficulties acquiring crude supplies. No consumer suffered lack of deliveries. There was no shortage. So why did the price increase? Luckily, it is beyond the scope of this paper to answer this question. However, contemporary developments in the petroleum market are the result of a complex and dynamic interrelationship between different factors: unexpected increases in demand over recent years that, together with other factors, contributed to rising prices which have attracted newcomers, either with short-term profit motives or with long-term aims to set up production and/or marketing and distribution channels; and the emergence of a financial crisis that is being globalised and seriously affect the 'real economy' at the beginning of 2009. The international oil market of 2010 differs along important structural features compared with the international oil market of the 1970s. In the short term, the oil traders are in charge of the price formation. The ownership of oil cargoes is potentially impossible to trace from producer to consumer. In this respect, the producer and the consumer are detached from each other. Setting the price of oil by political decision is no longer an option, either for oil producer or for oil consumers. In the past, the producers could make secret deals with consumers and discriminate among them by giving preferred customers a better price. Today, the only way to influence prices is to change the traders' beliefs about the future price of oil. Political actors are of course, not totally without means for achieving this.

4. Political constraints

Since the end of the Cold War the patterns of international relations have become far more turbulent and unpredictable. Under the Cold War it might have been unpleasant, but the World was relative stable in its bipolarity. After the Cold War highly different predictions have been put forth and they have all been proven somewhat correct. It is not only that the World is changing but it is changing in different directions simultaneously. The World is moving towards more economic liberalization, and increased regulation and nationalization at the same time. Energy companies are able to merge across borders far beyond what was

conceivable just a decade ago. At the same time governments of energy producing states increase their control over energy companies, and to some extent reintroduce nationalization of the energy sector as a possible and preferred policy. We thus need to consider two coexisting but contradictory trends.

4.1. Globalization of oil

One of the most prominent buzz-words of today is 'globalization'. Although no agreed upon definition of the term exist it is commonly used as describing increased transactions across borders. However, not every kind of border-crossing activity is relevant for the kind of processes we are interested in. Held and McGrew (2002: 1-2) defines globalization as "a historical process which transforms the spatial organization of social relations and transactions, generate transcontinental or interregional networks of interaction and the exercise of power". Transcontinental and interregional networks have existed for a long time, with prominent examples as the Silk Road, and the economic relationship between colonies and the colonial powers. In order to relate to the present situation we need to add some substantive content to the concept. In the economic realm, the globalization processes have at least four such empirical dimensions:

- Increased international trade of raw materials, semi-products, manufactures and last but not least: services.
- Increased capital flows across borders, to a large extent unrestricted by political authorities.
- Increased integration of production processes among companies situated in different countries and continents.
- Increased harmonization of economic policies, legislation and structures in countries across the globe (Sachs 1998: 98-99).

Such globalization processes are of course as present in the energy sector as in other industries. In fact, regarding the first point, the oil market was globalized as early as in the beginning of the twentieth century, in particular when the Anglo-Persian Oil Company was established in 1909 in order to develop the oil resources in Persia (now Iran). This was of course linked to the aforementioned security interests of the UK. Nevertheless, it initiated the development of oil as one of the most global industries ever. With companies operating all over the World it follows that capital travels both along and across borders, both as investments and revenues.

On the other hand, certain features of the energy industry contradict the globalizing effects. First and foremost is the fact that oil can only be produced where the geological hydrocarbon deposits are located. It can be refined elsewhere, but the initial stages of what we

call oil production are physically bound to the reservoirs. To various degrees this also goes for other resource based industries. However, for instance agricultural production can take place in a huge number of places given investments in seeds and some areal, soil and weather conditions. For oil and gas the restrictions are much narrower, limited to the presence of recoverable hydrocarbon deposits. This makes the oil and gas industries somewhat different from other industries on some important dimensions. One aspect is the bargaining power towards companies, national or international, of the sovereign political authorities over the onshore or offshore territories where the oil is located, described as the obsolescing bargaining pattern (Vernon 1977:151). The point is that although the host country can be in a weak position compared to an international oil company before the company starts investing in oil production in that country, this relationship changes as soon as the company has made the investments, since it cannot remove any of the production facilities or assets from the production sites. In economic terms this relates to the concept of sunk costs. Taken together with the high capital intensity of oil exploration and production it creates a rather special relationship between companies and host countries. Primary features of globalization like short term capital movements in and out of countries, short term profit horizons on the part of companies, and reduced role of the state are less prominent in the oil industry. This is not to say that the international oil companies are powerless and weak, but simply that their relationships with respective host countries takes on some special characteristics compared to the relationships in for instance regular manufacturing industries. We can say we get 'globalization with a twist' in the international oil industry.

4.2. Geopolitics of oil

Geopolitics and energy are well suited for each other. Although the classical scholars in the geopolitical tradition did not focus on energy in particular, their emphasis on the importance of the size, topography and location of territory for political power in international relations can easily be related to the fact that control over energy resources presupposes direct or indirect control over the territory where the energy resources are located.

After the collapse of the Soviet Union, Francis Fukuyama (1989) declared the final and total victory of capitalism and democracy over other economic and political systems. Fukuyama argued that economic and political liberalism had concurred its competitors and was more or less destined to prevail for ever more, thus the phrase "the end of history?". This idea was of course rejected by many scholars. A prominent analytical argument with special importance for the oil industry is the one made by Samuel P. Huntington that in the future,

"the great divisions among humankind and the dominating source of conflict will be cultural [and]… the principal conflicts of global politics will occur between nations and groups of different civilizations…. The fault lines between civilizations will be the battle lines of the future" (Huntington 1993:22).

In addition to the academic arguments, several events in world politics after the end of the Cold War have nourished skepticism towards the 'end of history' notion. Already the Iraqi attack on Kuwait in 1990 was a setback for this perspective. The Iraqi war and the raise of China on the international political scene challenge the rosy picture of the triumph of Western capitalism. We can observe a renewed importance of classical geopolitical issues and conflicts, even among leading countries on the World stage. When it comes to the fault lines of Huntington only 19 percent of Muslim-majority countries are democracies, compared to 61 percent of the world total (Freedom House 2005), all Muslim democracies are outside the Arab region; among the members of the Arab League, none can be regarded as a real democracy. The Islamic countries are less free and democratic than the rest of the World, and among Islamic countries the oil-rich ones are less free and democratic than the others.

Table 1: Democracy index for the OPEC countries

	1995	2000	2005	2010	Category
Algeria	7.0	5.5	5.5	5.5	Not Free
Indonesia	6.5	4.0	3.5	2.5	Free
Iran	6.5	6.0	6.0	6.0	Not Free
Iraq	7.0	7.0	6.0	5.5	Not Free
Kuwait	5.0	4.5	4.5	4.0	Partly Free
Libya	7.0	7.0	7.0	7.0	Not Free
Nigeria	6.5	3.5	4.0	4.5	Partly Free
Qatar	6.5	6.0	5.5	5.5	Not Free
S. Arabia	7.0	7.0	7.0	6.5	Not Free
UAE	5.5	5.5	6.0	5.5	Not Free
Venezuela	6.0	4.0	3.5	4.5	Partly Free
OPEC avr.	6.41	5.45	5.32	5.18	

Source: *Freedom House* 1995 – 2010.

As shown in table 1 the general trend among the OPEC countries is a very slowly move towards democratic regimes. With the same speed it will take more than fifty years before these countries are genuinely democratic. The figure also shows that both Nigeria and Venezuela have moved in the opposite direction during the last five years. It is reasonable to suggest that both religion and oil reserves influence the political regimes of the oil producing countries. But despite their similarities in regime and culture, the Arab oil producers differ as

to what kind of price strategy they subsequently pursue: In particular, the large producers with large oil reserves have a long-term interest in the oil market, and are thus more inclined to pursue a low or moderate oil price strategy, compared to small producers with limited reserves who would like to see a high oil price in the short term, regardless of the long-term consequences. Their respective reserve position seems more important for their export strategies than their political, ethnic or religious characteristics. It is hard to identify any link between regime type and production strategy. Norway, the world's third largest oil exporter and an electoral democracy, has on several occasions cooperated with the OPEC countries in stabilizing the world oil price. Among the 26 countries with more than a one percent share of world oil production we find, twelve democracies, three with restricted democratic practice, five traditional monarchies and six authoritarian regimes (Freedom House, 1999, *to be updated*). We can conclude that oil producers come in all kinds of political shapes, and that there is little evidence for suggesting that oil-producing countries with certain political regimes or belonging to certain civilizations are more likely to restrict the supply of oil than others.

Geopolitical factors do play a significant role in the world oil industry, but does not trump economic and structural factors if one adopts an overall, global view. Geopolitics is primarily having a *regional* effect; it is important (but rather ineffective) in the case of US boycott of Iran, and it is important in competition for access to resources in Central Asia and the Caucasus. These regions affect the total supply of oil a little more than marginally, but they have a potential to become more important over the next years. With the deepening of the financial crisis, however, economic and structural factors – in that order of importance – are likely to play an even more important role globally than geopolitical factors.

5. Policy implications

5.1. US global oil strategy

When Winston Churchill made the historic switch from coal- to oil-fired naval vessels prior to the First World War, the international oil market was born. It became highly politicized due to the immediate security importance of the oil resources for warfare - oil was a strategic commodity before it became a commercial commodity. The US awareness of this strategic aspect changed dramatically during the Second World War. In 1941, Franklin D. Roosevelt brushed off a request from the US oil companies to provide economic support to Saudi Arabia: "Will you tell the British," he told his aid, "… I hope they can take care of the King

of Saudi Arabia. This a little far afield for us." (Yergin 1991: 394). Only two years later, Saudi Arabia was included in the Lend-Lease arrangement, and Roosevelt proclaimed, "the preservation of the independence and territorial integrity of Saudi Arabia is vital to the defense of the United States".[7] The immediate reason for this change of opinion was the increasing US demand for imported oil during the Second World War.

The strategic value of oil means that political factors have influenced and will continue to influence the international oil market. In the present situation, no one should be surprised that a country that consumes a quarter of the world's oil finds the region holding two-thirds of the world's oil reserves to be of the highest political importance. The argument that the United States has an interest in the oil supply from the Middle East is as novel as claiming that the world is round. The real question here is to what extent a single country – even a very powerful one – can *deliberately* shape the international oil market through political means.

Under the first, to a somewhat lesser extent the second, Bush administration the issue-specific weakness of the US in the politics of global energy was not realized by policy-makers. Their unilateral approach to a number of different international and foreign policy issues was based on the assumption that US supremacy would prevail. Having become the only superpower it would dominate geopolitics at the global level, using its superior military resources, its 'hard' power, whenever necessary. It is a sign of weakness, not strength, when the US resorts to the use of military power in order to increase its energy security. It demonstrates fully the lack of market power on behalf of the US in the international oil market. To the extent a regional approach to geopolitics was seen as necessary to back up US global geopolitical dominance, US administrations before and during the last one have conducted differentiated strategies of using hard and soft power interchangeably or in combination. The United States thus managed to exercise hegemonic power in the Middle East and still does, although with problems caused by its occupation of Iraq, failure to produce a solution to the Palestine issue, and the challenge from Iran since the Iranian revolution.

Energy security has become a more complex issue today; perceptions of it vary and proposals to resolve it are multiple (Yergin 2006). Both the possibility and the means to obtain it are much more uncertain than a few decades ago. In addition to the permanent conflicts in the Middle East there is increasing competition for access to oil resources in Africa and concern over transport routes at sea and out of Central Asia and the Caucasus. The

[7] Quoted in: US Senate 1975 *Multinational Oil Corporations and U.S. Foreign Policy Report to the Committee on Foreign Relations by the Subcommittee on Multinational Corporations.*

US has tried to influence both these regions, but have not played a decisive role in shaping the geopolitics of energy in these regions, involvement in pipeline projects and the second Bush-administration's Africa-strategy notwithstanding. A US foreign policy determined to gain access to oil resources through political means with the aim to claim a right or ownership to foreign reserves is simply not in sync with the present market characteristics discussed above. Based on the lack of supply disruptions since 1973 one might suggest that the US government relaxed the focus on access to resources. This would not necessarily depoliticize energy issues, but change the content of US global energy policy. A more imminent and important challenge than physical supplies is the price volatility in the market. A return of the 2008 price shock seems an adequate aim for US foreign energy policy. This is not easily achieved and would require political skills on the same level as a resource acquiring strategy.

Both in a short- and long-term perspective, the Middle East countries are paramount for the determination of oil prices. The fact that two-thirds of the world's proven oil reserves are located in the Middle East indicates the long-term role of this region. About a third of the word's oil supply comes from the area. Any conflict that could potentially disrupt any aspect of this supply will immediately affect the price of daily traded oil. This makes the region important for all oil-consuming countries; regardless of to what extent they receive oil directly from the region: "although U.S. dependence on the long-haul Middle East has fallen sharply, this has not made U.S. prices less vulnerable to a disruption in Middle East supplies."[8]

Many analysts hold that the US-led invasion of Iraq was mostly, or partly, initiated in order to gain control over Iraqi oil. Ten percent of the world reserves are located in Iraq, the second largest in the world, next to Saudi Arabia. But it is a far leap from acknowledging that Iraq has the geological potential to become a major producer to claiming that the one who controls Iraqi oil controls the world oil price. Such an influence would require a substantial increase in the Iraqi oil production capacity. An increase from today's production of just below two million barrels per day (mbd) up to six mbd is estimated to cost $30-40 billion.[9] This figure does not including the costs of securing personnel and physical installations. Iraq as a consumer-friendly producer, flooding the market in order to drive prices down, was a distant and highly uncertain scenario when the war started and it has hardly become more likely today. The relationship between the Iraq War and oil prices is eloquently described by Anthony H. Cordesman, Senior Fellow at the Center for Strategic and International Studies in

[8] http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/oil_market_basics/Trade_text.htm
[9] According to a McKinsey's Achmed al-Shahrabani, *BBC News* 16 July 2003, http://news.bbc.co.uk/2/hi/business/3071159.stm.

Washington: “Let’s get real. We have no idea what the oil market is going to be. We don’t know how quickly Iraq can come back online. We don’t know what level of surplus production will exist. We don’t know how OPEC will respond. … Trying to shape world oil prices on the basis of a war in Iraq is sort of like trying to sculpt an iceberg with the Titanic” (Cordesman 2002). The structural conditions in the oil market and the costs connected with the use of political force suggest that any direct influence on the world oil market price is hard to achieve, even for the world’s hegemonic power – the United States.

We tend to think of the US, at least since the end of the Cold War, as a hegemonic power, implying that it can control the conditions in almost any area globally. Also the international oil market has been approached from such a starting point. The international oil market is, of course, not isolated from the rest of the international economy. The changes in the oil market can be a result of not only an individual actor’s non-oil interests and behavior but also the actor’s position in a more general international political structure. To capture this aspect of the international oil market, Simon Bromley, in his study of US oil policy, develops what he calls a conjunctural approach, combining realism with orthodox economics: “By . . . placing the developments of US oil policy in the context of its wider management of the world economy and nation-state system, [the approach] demonstrates the central role which oil played in the organization of US hegemony” (Bromley 1991:242). His conclusion is that the explanation of oil-market development is connected with the overall development of the international postwar economic system: “The economic crisis can be more readily understood as the results of general contradictions within the maturation of postwar capitalism, evidenced also in an overall shift of US hegemony to an increasingly unilateral and predatory form; and second, the response of the United States to these wider challenges played a significant role in the origins of the oil price increases” (Bromley 1991:242–243). A similar proposition is put forward by Karlsson (1993:12, my translation): “The fundamental . . . hypothesis in the study is that the control and power in the international oil economy has been the key grundbulten in the US-controlled world order. . . . When this key is disturbed so is the position of the hegemonic power (the US), and its ability to control the world order. The understanding of the international oil market is substantially limited if the question is not related to the control over the world order and the development and change of the world economy.”

These authors overemphasize the structural role of the United States and underemphasize the outcome of the politics of the international oil market. On the contrary, this author would argue that the United States has been a policy-taker in the international oil market since the beginning of the seventies. It has primarily struggled to compensate for its lack of influence in

this market, using whatever power it found available: diplomatic skills, economic rewards, and military force. The use of these instruments has been a sign of weakness, not strength. Again, we should not confuse the fact that the behavior of the US influences politics in the Middle East, which it does; with the illusion that the US deliberately designs the future of the international oil market, which it doesn't.

5.2. The EU/European foreign energy strategy

Approximately 65 percent of EU energy consumption is covered by oil and gas. The EU holds 0.5 percent of the world oil reserves and 1.3 percent of the world gas reserves. Moreover, the Union stands for 2.6 percent of the world oil production and, a bit more uplifting, 5.7 percent of the worlds gas production (BP 2010). In neither of these markets will the EU ever be able to play a major role based on its market power. As an illustration: Norway holds larger oil and gas reserves than the EU countries taken together.

It follows that the energy security of the EU member states are partly in the hands of other actors. Compare to the US energy independence is an even more of an illusion for the EU. The main policy achievement of the EU over the last decades, the Internal Energy Market (IEM), offers no solutions for security of supplies, since all major suppliers, at least for oil and gas are located outside the Union. Thus, a coherent energy strategy towards present and potential energy suppliers is needed. Such a strategy is likely to be far more effective if developed in concert among the EU members rather than individually. A coherent foreign energy strategy for all the EU members seems a tall challenge to formulate and implement (Andersen and Sitter 2009). The ambition in this section is more limited. The aim is to discuss a few aspects of a European political strategy aimed at strengthening European security of supply. A key element is that the EU faces very different suppliers economically, politically and culturally. Thus, the Union will have to be flexible and responsive and able to enter into dialogue with each and every supplier individually. For instance Norway and Qatar will require very different energy diplomatic approaches from the Union. Furthermore, the Union will have to be able to approach the individual energy suppliers as a united political entity. Internal differences will weaken its ability to successfully be a player on the global energy scene. The legal and economic instruments of the internal market will in this situation have to be supplemented with political and diplomatic skills. The question is: Do the European Union posses such assets?

The EU has to conduct its external energy relations handling variation along two dimensions: the difference between counterparts relying on political instruments in *their*

energy strategy towards the EU, or those relying on economic instruments. These different instruments can be applied in conflict with the EU or in cooperation with the EU. The strategic picture is outlined in figure 2.

Figure 2: Dimensions of the EU external energy strategic relations

	Political	**Economic**
Conflictive	Economic sanctions, clandestine action, and use of military force. Ill.: Gas shut down by Russia.	Cartelization, protectionism in trade. Ill.: Gas producers' tacit market division.
Cooperative	Bi- or multilateral diplomacy, multilateral institutions. Ill.: Energy Charter Treaty, other formal agreements with suppliers.	Free-trade, openness to Foreign Direct Investments. Ill.: IEM, companies' investments in producing countries.

Source: Claes 2009.

Obviously the situation in the oil market is highly frantic economically with the relatively high price and the fluctuations in the price development. The political aspects of the relationship between the EU and key oil producing states in the Middle East is obviously influenced by the conflict between the US and the insurgence in Iraq. As figure 2 suggests the EU-Russian gas relationship is a combination of confrontation and cooperation. The energy relationship between the EU and Norway has for most of the time been in the 'cooperative-economic' cell, although there have been instances where even this relationship has had certain political and conflictive features.

In the dual trend of globalization and renationalization outlined above the EU have three main options:

- Increase the reach of the liberal free-trade area, to include energy exporting countries.
- Ensure the supply of energy from sources outside the free-trade areas by political means.
- Reduce dependency of foreign energy suppliers by either reduce energy demand or increase indigenous energy production from coal or nuclear power or develop new renewable energy forms.

The counterparts of the EU differ widely regarding their position in respect to free-trade. The one energy supplier that in fact is part of the Internal Energy Market is Norway. Norway seems to be of minor importance if one reads the energy strategy documents of the Commission, but this is probably rather a result of the perceived economic and political

proximity between the EU and Norway. In fact, Norway is the second largest supplier of both oil (approx. 15 %) and gas (approx. 25 %) to the EU.

The by far most important supplier of energy to the EU is Russia. Former Soviet Union countries covered 36 percent of the oil imports to the EU in 2005, and Russia covered the same share of the gas imports. Russia is in fact a bit hard to place inside or outside the free-trade logic. It has obviously changed, first from an extreme low score on free-trade during the Soviet era when it was the prominent advocate for the planned economy. During the first decade after the break up of Soviet Union it seemed as if Russia would rapidly enter the pool of market economies. However, the experience over the last few years weakens this assumption. When it comes to its energy relations with Russia the EU will have to "shoot at a moving target" as some of the underlying features of the economic system of Russia are changing. Since increased power is located in the hands of the president, the policy can more easily change with the personal ideas and the interests of the particular power-base of different presidents. The importance of flexibility seems more appropriate than ever.

When it comes to other regions like the Caucasus, Middle East and North Africa, the market approach seems not to become a possible strategy for several decades, if ever. Thus the strategies towards these areas must imply a strategy with use of more political instruments. In 1989 the Gulf Cooperation Council (GCC) and the EU signed a Co-operation Agreement, which prescribe future negotiations on a Free Trade Agreement (FTA) between the EU and the GCC. FTA negotiations started in 1990 but soon reached a deadlock. Despite the lack of an FTA trade and economic exchange between both regions increases. The GCC is currently the EU's fifth largest export market and the EU is the top trading partner for the GCC with a share of 18% of total GCC trade. As the (enormous) *Eurogulf study* shows there are substantial gains to be reached from energy integration between GCC and the EU (Luciani 2005). The extension of gas infrastructure from Qatar to Europe is a possible future option; in particular as the study foresee an accelerating industrialization of the GCC countries. In the oil sector the study argues that "80 percent of conventional oil production, up to 104 million barrels per day, could be developed and operated at a cost of less than $8 per barrel … perhaps $12-$14/bbl" (Luciani 2005: 7). The question is to what extent the EU is capable of enhancing its role as an international energy player? Two challenges can immediately be highlighted: political will and institutional capacity.

Political will: In the EU commission's green paper: "A European Strategy for Sustainable, Competitive and Secure Energy" (Commission 2006), the need for a coherent external policy is identified, and the member states are called upon to support such a position. A number of

key goals are set out including: a clear policy on securing and diversifying energy supplies, energy partnerships with producers, transit countries and other international actors, reacting effectively to external crisis situations, and integrating energy into other policies with an external dimension. With the possible exception of the last goal, all these ambitions are dependent on other actors.

Regarding instruments in achieving increased security of energy supplies the green paper is still on a rather preliminary level when it states that diversification could be served by proposing "clearly identified priorities for the upgrading and construction of new infrastructure necessary for the security of EU energy supplies", The aim of developing "independent gas pipeline supplies from the Caspian region, North Africa and the Middle East into the heart of the EU" are obviously infested with political and economic obstacles. Moving from goals to instruments it seems that political negotiations and dialogue is the viable track for an EU external energy strategy. However, the EU does have one valuable asset: the inclusion of energy into broader integration processes: "In line with the European Neighbourhood Policy and its Action Plans (and in addition to the current work undertaken through Partnership and Cooperation Agreements and Association Agreements), the EU has for some time been engaged in widening its energy market to include its neighbours and to bring them progressively closer to the EU's internal market. Creating a "common regulatory space" around Europe, would imply progressively developing common trade, transit and environmental rules, market harmonization and integration. This would create a predictable and transparent market to stimulate investment and growth, as well as security of supply, for the EU and its neighbours" (Commission 2006). The potential for issue-linkages increases as more sectors are included in the negotiations and integration processes. However, such a strategy might increase the pressure for even further enlargement of the Union.

Institutional capacity: The European history of integration is an impressive story of the transformation of interstate cooperation to a polity in its own right; although with several shortcomings when unfairly compared to the polity of modern full fledge national states. For the purpose of this paper it is of interest to note that a key element of this integration process is a combination of political bargaining between states and institution building at the community level. Looking back at the recent history of the Internal Energy Market these features are very clear. They are perfect for what is known as 'negative integration' where the purpose is to remove existing barriers between countries. When the ambition becomes to build new policies at the community level some additional features of the polity becomes essential. For instance, one needs the capability to formulate policy proposals and gain the

support of stakeholders, different parts of the political elite, and preferably also the public. A general observation concerning the European integration process over the last decades is the new challenges arising from this move from negative to positive integration (Scharpf 1999). Taking this even one step further we can ask what kind of features are needed once the EU aims at developing a common policy towards other actors outside the community. One important factor in the literature on foreign policy is the importance of internal coherence. The minor role of the EU in the Iraq crisis was of course due to the strong interests of the US. But the fact that the EU countries could not, or would not, agree on a common policy obviously weakened their power as critics of the US or allies of the US. In international relations one also needs both the willingness and ability to act, in certain cases to act with vigor (Baldwin 1979).

6. Conclusion

Both the political and economic conditions for US and EU foreign energy policies have changed dramatically over the last two or three decades. First, the organization of the international oil market is very different from then, with a liberalized and truly global oil trade and similar structures emerging in the gas sector, through the expansion of pipelines (Kalicki and Elkind 2005), and increased role of overseas traded LNG (Jong et al. 2010). Secondly, the global structure at the company level is more complex with various alliances between and among IOCs and NOCs, both upstream and downstream (Claes and Hveem 2009). Thirdly, the number of energy producing regions is also increasing as new, but smaller, discoveries are made in areas like, offshore Brazil and in the Arctic. The role of the Middle East will increase but non-OPEC production continuous to die harder than anticipated.

Trying to bring together some observations made in this paper suggest that the concept energy security generates two very different debates: a structural and a strategic one. On the structural dimension the fundamental question is to what extent the geologically defined fixed amount of oil has any significant economic or political implications. Presently, and for the foreseeable future, the geologically defined amount of oil resources in the ground is ‘a geological fact of no economic or political importance’ (cf. Adelman 1993a). However, the fact that an increasing number of oil traders, company CEOs, political decision-makers and first and foremost the media, finds the Peak Oil movement worth listening to, makes it most likely that this debate will continue and thus also influence the behavior of these actors. A widespread perception of a physical shortage of oil can only have the economic effect of increased prices, and the political effect of creating conflicts.

The strategic dimension captures what kind of policy or strategy that most effectively increases the actors' perception of having a secure energy future. Here we have suggested two very different tracks presently available: the globalization strategy of the liberal free-market and free-trade policies and the mercantilist approach of trying to gain exclusive access to energy resources and reserve these for own national consumption. The fruitfulness of these two strategies depends on what is perceived as the important element of energy security. If supply security is predominant, Churchill's conclusion still holds: "safety and certainty in oil lie in variety and variety alone".[10] However, I would argue that in modern times (read since 1950) the physical supply of oil has hardly ever been severely jeopardized. The important element of energy security today is related to the price of oil. Taken together with the fact that we do have a global interconnected and fully liberalized market for oil trade, variety has no meaning, as the price will be same, and increase simultaneously, for oil delivered from all source. In such a market the old type of geopolitics seems to be very ineffective. If the companies and the trading mechanisms are unable to delivered a reasonable amount of price stability, international political cooperation could be a more effective strategy. However, it is hardly any sign that this strategy has gained momentum among the key political players on the global energy scene.

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[10] Quoted in Yergin 2006: 69.

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